

EAGLE'S EYE

Indian Education Department



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Dr. Doug Garbe, left, discusses the "Navajo Project" computer printout with graduate student LeRoy Gishi who has assisted him on the program. (Photo by Hal Williams)

Vocabulary: Problem Source

It's a known fact that comparatively few American Indians become successful in sciences, engineering, medicine or other disciplines requiring a solid mathematics background.

A Brigham Young University math professor has found what he believes to be one of the fundamental causes of the problem.

Vocabulary!

Dr. Douglas Garbe, an associate professor in Indian education and mathematics, said that his tests administered to students from the fourth grade through the freshman year in college show that Indian students have more trouble in mathematics because they are not sufficiently taught the vocabulary to accompany the problems.

He believes very strongly that other minorities face the same problem in school when teachers assume that students

understand the meaning of words. He plans to extend his research to study non-Indian minorities in the near future to substantiate his assumption.

Dr. Garbe made his first study of the problem in 1973 while working on a doctoral degree at the University of Texas in Austin.

He sampled 8th graders and found that Indian students differed significantly from their Anglo classmates in selection of meanings of basic mathematics terms presented to them. No significant difference was shown between Indians attending an

integrated school in Blanding, Utah, and at Shonto, an all-Indian school on the Navajo reservation in northern Arizona.

The professor became intrigued with this problem because he teaches Indian students in mathematics courses at BYU. And out crops the problems.

They have trouble with math vocabulary.

Hence, he made the study of eighth graders.

But that didn't give him a satisfactory answer because he

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Record Number Coming For Summer Orientation

Final plans are under way for the annual Summer Orientation Program for incoming Indian freshmen. Within two weeks more than 85 Indian students will begin their higher education at Brigham Young University. This will be a record number, a 20 percent increase over the previous years.

Dr. V. Con Osborne, Indian Education Department chairman, attributes this new record number to better recruiting. "Many times when we've gone out to do recruiting, students have already heard about the Summer Orientation Program.

The students hear about the program from other students who have participated."

For the past seven years, the Indian Education Department has conducted a Summer Orientation Program specifically for incoming Indian freshmen. A major goal of the program is to increase the retention and graduation rates of BYU Indian students and to help them make an easier adjustment to college life by starting their academic careers during the less crowded summer term.

Students will be given effective tools for future success in college and to become better aware of learning opportunities available at BYU, Dr. Osborne said. The program is geared toward answering questions concerning majors, study habits,

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'Sky Blue' Sings In Nashville

By Marie Robbins
Editor

The Golden Spike Country Music Association of Ogden, Utah, in conjunction with the Texas Proud Entertainment Newspaper of Brazoria, Texas, featured country music acts during the annual Country Music Fanfare Jubilee June 5-14 in Nashville, Tenn.

Among its featured entertainers this year was Wilfred Numkena, a full-blooded Hopi Indian who performed on stage during the fanfare festivities in Nashville.

Numkena, who performs under the stage name of "Sky Blue," was nominated and won the 1980 "Male Vocalist Award" for the State of Utah at the Golden Spike Country Music Association annual awards held in August and received the award for his recognition and contribution to country music.

Fanfare is an annual festival sponsored by the country music industry and the City of Nashville to extend its appreciation to their affiliates, artists and fans for the support which they provide to the growth of country music. This summer such big name artists as the Oak Ridge Boys, Barbara Mandrell, Buck Owens, Roy Clark, and Tammy Wynette performed there.

Along with big name entertainment in the Grand Ol' Opry, Fanfare offered a full array of activities such as bluegrass fiddle contests, barbeques, and new talent which performed throughout the entire 10 days of festivities.

Numkena has been entertaining since the age of 11, and has since been credited with recording three albums: "The Boy From Hopiland" (1965),

"From the Eagle's Bed" (1969), and "The Night Riders" (1975)."

Of his Nashville debut, the talented artist expressed the hope for national exposure in the country music business. "This will be my opportunity for a break for exposure in the Nashville area and possibly a recording."

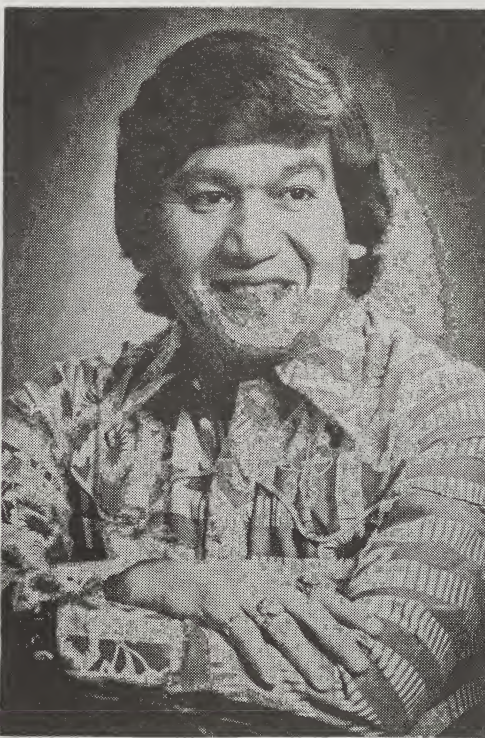
"Sky Blue" has been performing with a band for several months in the Salt Lake City area doing night shows for a country dance hall. He has also done many shows for local rodeo dances for years and given pre-shows for big name artists in the Salt Palace, such as Jim Ed Brown and Helen Cornelious. He has also appeared twice on national television in 1969 and at one time performed at the World's Fair in Osaka, Japan.

Numkena coined the stage name "Sky Blue" in 1975 when he thought it would be best to perform under a "more interesting and appealing" name. "Actually the name 'Sky Blue' refers to my Hopi clan, which is the Sun Clan." He explained that the Sun Clan is inter-related with the cosmos, such as the stars, moon, sky, and so forth.

The singer is a Brigham Young University graduate who majored in elementary education and is currently the director of Indian education in the State of Utah. He presently resides in the Salt Lake City area.

Numkena is the son of William and Mary Numkena of Moencopi, Ariz. He credits his parents as his most influential people in his musical career and pursuits. "My father played the

saxophone in a 'swing' band in the latter part of the 50's and my mother was an accomplished vocalist. It was with their encouragement and support that I am able to enter a musical career without taking any formal voice lessons." He is also self-taught instrumentally.



Wilfred Numkena, a Hopi Indian and BYU graduate, performed as "Sky Blue" recently in Nashville.

'Generation' Anniversary

Alumni of the popular BYU Lamanite Generation will hold a 10th anniversary reunion July 3-4 in Provo, according to Charlie Stewart, vice-president of the association.

"We expected to have possibly 200 people attend," Stewart said. He and the committee are planning for the group to attend the Fourth of July parade in Provo, have a picnic, attend a Lamanite Generation show especially prepared for the group, a banquet featuring Elder George P. Lee as speaker, and an historical media presentation highlighting the 10 years since Janie Thompson organized the group and took the show to the public.

Since that time, she has taken the group across the United States and Canada, into Mexico and Central and South America, into Scandinavia countries, the Soviet Union, and several East European countries.

"Generation" alumni planning to attend should contact Stewart at 378-3821 as soon as possible for reservations.

Vocabulary: Problem Source

Contd. from Pg. 1

found that there was little difference between the math vocabulary knowledge of the 8th graders and those who were in his college freshman classes.

In 1978, he took the same test used five years earlier and administered it to students in the 6th, 8th and 11th grades. "This test showed Indian students to be significantly different from their Anglo peers in each grade level," Dr. Garbe reported. "Comparing the Indian students between each grade level, there was no significant difference found to exist."

The professor said that the major implication drawn from the study is that once a concept for a math term has been formed in the mind of a student, it appears it is not significantly altered by additional years of schooling. "The concepts students associated with the terms presented in the study were learned before the 6th grade and were retained throughout the years," he added.

His latest study completed last fall, with followup tests this spring, focused on the 4th grade where many concepts associated with some of the most basic math terms have been already formed in the students' minds.

After collecting a considerable number of student definitions of math terms, Dr. Garbe reduced these down to just two definitions per term. Students took the exam in which one of these two were to be selected as best fitting their conceptualization for the term.

Some of the words included the following and their choices: "Sum"—(a) part of something, (b) the answer in addition; "quotient"—(a) the answer in a problem, (b) like waiting for a minute; "Addition"—(a) to try out for a play, (b) a room built on a house; "divide"—(a) to split or make even, (b) the opposite of multiply; "set"—(a) set the clock, (b) a group of things; and "greater than"—(a) six is greater than eight, (b) four is greater than two.

Dr. Garbe is quick to point out that many words in mathematics sound somewhat like other words; therefore, the confusion if a teacher has not spelled out the word distinctly for students, pronounced it, taught its mathematical meaning and shown it in correct context. This is reinforced by requiring students to do the same.

The professor believes that Indians' poor success in math could very likely come from a variety of factors, including a lack of parental motivation, teacher motivation, role models,

reading skills, language interference, subject relevance, computational skills, self-image, self-motivation, math successes or an application void.

But his research has pinpointed a less researched problem: basic mathematics vocabulary.

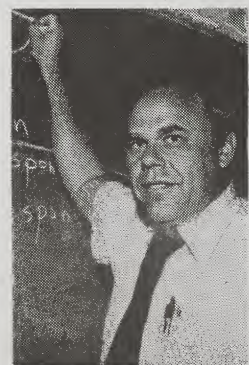
"Our tests reveal that Indians and Anglos with comparable reading skills show little difference in their math vocabulary responses. But there was a significant difference of responses when students having equal ability in computational skills were compared," he reported.

Dr. Garbe has other proof of his findings. A former BYU Indian student is now a principal of a small elementary school in southeastern Utah. He was careful to teach his fifth graders the proper definitions of math terms. It was not surprising to Dr. Garbe when these students were tested in his survey. He found that there was no significant difference between them and their peers in a dominant Anglo school.

Then the professor collected data on general education math classes at BYU in which 71 Indians dotted the enrollment. During the semester as each of eight tests were given, there was a progressive failure rate from the first test to the last with only 15 percent passing the final exam.

In similar math classes last fall with a large Indian enrollment, instructors put more emphasis on math terminology and reading of mathematics. Nearly every student passed the final exam.

"The problem boils down to one thing: teachers are not spending the time on math terminology they should be," Dr. Garbe observes. "They seem to be teaching skills but this study suggests that they must also emphasize vocabulary. After all,



DR. DOUG GARBE

Begay Studies Engineering

By Marie Robbins
Editor

Amid the educational pursuits gained by young, ambitious and aspiring students in any field of discipline are often bound by the cultural and traditional standards of education.

One vivacious student who has embarked on altering society's "common" academic field for women by choosing electrical engineering as her major is Marlene Begay.

Marlene is a 23-year-old Navajo from Salt Lake City, Utah. She is presently working as a pre-professional engineer intern for the International Business Machines Corporation (IBM) in Tuscon, Ariz.

In January 1982, Marlene will be leaving school for a temporary job assignment for IBM in Austin, Texas. "I will probably be in Austin for eight months working for IBM as a central processor. When I've completed my assignment there, I'll be back to BYU to finish my schooling," she explains.

Marlene comes from a family of five children of which she is the second oldest; Maurice is a returned missionary and a BYU student majoring in business; Marty is also a BYU student pursuing a mechanical engineering degree; Marvin is a student at Utah State University majoring in civil engineering; and Marna is an artist. Their parents are Roy and Betty Begay of Salt Lake City, Utah.

Marlene has attended two other universities prior to attending BYU. She first began her college life at Utah State University in Logan, Utah, and later transferred to Northern

Arizona University in Flagstaff, Ariz.

The engineering student emphasized the need for good teachers that will help female students pursuing engineering degrees to motivate and give encouragements. Marlene explained that there are a lot of pressures put on her because she is one of the few women enrolled in the College of Engineering Sciences and Technology.

She recalls an experience a colleague at another university had, "Just because she was not meaning carefully pointed out."

In addition, teachers must frequently review the vocabulary in math and create situations in which students must use the terms in a correct mathematical context.

Dr. Garbe admits that computational skills are important, but the corresponding math vocabulary must be taught concurrently. He said it can be very easy to slack off or even avoid emphasizing the vocabulary in the teaching process, thus leaving deficiencies which may never be remedied.

He has the facts to prove it. He also suggests that if possible, the teacher should utilize the student's past experience with a term to help give the word some support for the special meaning it takes on in the math context.

Dr. Garbe, using college classes in which to prove this point, said that when a new math term is introduced, the teacher should write it clearly on the board, ask students to pronounce and correctly spell the word. "Teachers should be keenly aware of 'sound alike' words such as 'sum' and 'some' that may cause interference," he noted. "These should be written next to the new term being introduced and differences in spelling, possible pronunciation and



Marlene Begay, a Navajo from Salt Lake City is one of few women majoring in electrical engineering at BYU.

the typical engineering student in a male-dominated college, the department chairman informed the individual that it would probably be best not to even accept her in the college because she would soon drop out anyway!"

It is these kinds of pressures and attitudes that make it difficult for serious students like Marlene. But it also gives her more determination to accomplish her academic goals and prove herself. Marlene pointed out that at BYU, the Engineering Department chairman has been most helpful in assisting her, "My department chairman roots for us, but still it is not easy."

Aside from making it through electrical engineering, Marlene pointed out that if she ever had to make a choice between a career in electrical engineering or a domestic role, she would choose the latter. "I believe in the principle of the Church and feel that my career in engineering is only my second role."

Marlene is minoring in accounting and would like to someday receive her Master's of Business Administration degree. She has also worked for Senator Orrin Hatch's office in Washington, D.C., one summer.

He has the facts to prove it.

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By H. Crawford



Eagle's Eye staff member Mae Franklin was an extra in the movie "Windwalker." (Photo by Marie Robbins)



One of Mae Franklin's jobs for the movie was to care for Emerson John and Jason Stevens (right) who portrayed Spotted Deer and Horse-That-Follows, respectively. (Photo courtesy of "Windwalker")

Behind The Scenes In 'Windwalker'

By Mable H. Franklin

"Actors in their places! Everyone quiet, please!" shouts the assistant director, "This is going to be a take."

The cameras roll as the Cheyenne family stand together looking up at the scaffold, snow gently falling to the ground. In the background the valley is covered with snow, and the

mountains of the High Uintahs is barely visible.

"Cut!" he shouts moments later.

This is only a small portion of the movie "Windwalker," a recent film by Keith Merrill based on the book "Windwalker" written by Blaine Yorgason.

"Last May, I had the chance to participate in the movie "Windwalker". I was cast as an extra and also took care of my

nephew who was one of the grandsons of Windwalker. I was able to be a spectator and gain a better idea of how a movie is made.

My first day on the set, the movie crew was on location up in the High Uintahs. The crew worked out of Park City, where the production company put up all

the actors and actresses in hotels. Each morning that week, we were picked up at four o'clock in a van. It took an hour to get to the location which was past Kamas.

As we got higher in elevation, the snow banks on the sides of the road gradually increased. Once we arrived at the location, the actors, reported to their assigned

mobile homes that were parked on the side of the road.

The little boys were helped with getting their costumes on, after which they reported to the makeup artists and then on over to the hairdressers. Breakfast was furnished, consisting of donuts, fruit, juices, etc.

When the camera crew was ready for the actors, the actors were put on snow tractors which took them to the site where they were filming.

At this particular time, they were filming the scene at the scaffold with the family gathered by and the scene where the family descends down the hill on horseback.

Much time was spent in getting ready for a take. Many people were involved, each having a specific job to perform: costume designers, wranglers, makeup artists, hairdressers, technical crew, stuntmen and others. All were busy getting things in place.

There was equipment scattered all around on the snow, including two huge fans, bags of fake snow, reflectors, aluminum foil, bags of sand to hold down equipment, blocks of various sizes and lots of other things that were important for specific purposes.

When all was ready with actors in their designated places, all traces of foot prints were swept away. The set was ready to be filmed. The light was metered to make sure that the preceding shots take earlier matched up with the one being taken. Many of the shots were taken a number of times, because of a mistake on the part of the actor or the camera crew.

The shot of the family descending down the hill was taken a couple of times, because the horses kept sinking into the deep snow and they were unable to follow each other. The white horse gave the wranglers some problems, being too spirited and was replaced by a white mare for that particular scene.

There were many other substitutes made, some in which the skillful stuntmen were able to add suspense and excitement to the story. They really had to be experienced to try any of the stunts seen in the movie, and I thought they did a terrific job.

To be around the set as a spectator was an enriching experience. Now, when watching a movie, I can imagine the time and effort put into each scene, plus the countless hours put in by actors, and the rest of the movie workers to make a movie such as the "Windwalker" a success.

National Indian Magazine Features BYU Alumnus

Bill Hess is a freelance writer and an alumnus of Brigham Young University. He is married to a White Mountain Apache and has lived his entire adult life in the Indian country. Bill currently lives on the White Mountain Apache Reservation in White River, Ariz.

The writer has been a long-time editor of the "FORT APACHE SCOUT" and has also produced "APACHE" magazine. Bill's articles about Indians have appeared in a variety of national publications, including "NATIONAL GEOGRAPHIC" and more recently in the premier issue of the first national Indian magazine "NATIONS."

Vincent is also an alumnus of BYU. While at BYU, he studied law enforcement and wrote articles and drew for "Eagle's Eye." Besides Vincent's talent in cartooning, he is a skilled

musician, playing guitar, the harmonica and singing. His interest in police work has led him

to forming the White Mountain Apache rescue team, the first in the country sponsored by a reservation police force.



Craig Vincent, former Eagle's Eye cartoonist, is subject of article in "Nation."

Dr. Clemmer Participates In National Conference

Dr. Jan Clemmer of the BYU Indian Education faculty recently attended the 9th Annual Regional Indian Women's Conference at North Eastern State College in Talequah, Okla.

sponsored by "OHOYO" (Choctaw for woman).

Indian women from different localities across the United States gathered to discuss concerns of today's Indian women. These included such topics as political changes effecting Indian women, political involvement, the state of education, the demand for more women to become involved in professional fields, networking "OHOYO," and the need to overcome the stereotyping of Indian women,

Unable to find any Indian women's conference in the Intermountain west and being able to finance her own trip to attend this conference Dr. Clemmer commented, "I saw and heard women, other Indian women, who had very real concerns about what was happening to Indian women. And it served as a foundation to inspire those young women in college or in high schools who are considering what kinds of careers they possibly could pursue and if college is a worthwhile investment to them."

The conference included workshops, speakers, panel discussions and group involvement sessions. "I think it's good for Indian women of all ages to get together in little meetings like this; it's not only a boost but a learning session," she observed.

Ways in which women can become involved at community levels, as well as the state and the national level, were also presented. The conference served as a reinforcement and provided exchange of ideas on how Indian women can become leaders, now that women today are beginning to take leadership responsibilities that once were only conducted mainly by men of the tribes. Encouragement was also extended to those women who don't think of themselves as leaders, to prepare themselves so that they play an important role in decisions pertaining to them.

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Kaibab Paiutes Making Headway To Economic Survival

Kaibab Paiute Tribal Chairman Bill Tom has a unique problem among American Indian tribes: lots of land but not enough jobs and people to work the land.

He's hoping to change that as he leads his tribe in establishing a better economic base so that some members will return to work on their land.

A recently installed sprinkler system for a large fruit farm (see story on this subject elsewhere) on the reservation should supply some year-round jobs for some tribal members.

The Kaibab Paiute reservation, located in northern Arizona west of Fredonia, thrives on land grazing (mostly through leases), tourism and agriculture.

Chairman Tom said that six members of the tribe supervise allotted grazing areas to keep them from being over-grazed in a very sensitive environment. The tribe doesn't own the cattle but that is one of his long-range goals. He's looking to develop about 200 acres northeast of the main village into a major agricultural project.

"We have a good water supply and have 120 acres in grains (wheat, barley, wheat and then alfalfa) with more acreage to be developed," he said.

Chairman Tom is encouraging tribal members to do more raising of food, including livestock, sheep, pigs and poultry (chickens and turkeys).

The tribe already has power and water wells producing for these projects. Much of their land is virgin territory which has not been used for agricultural purposes (that they know of in recent history). They are using large motorized equipment to remove the brush by grinding it up and plowing it under.

"When our agricultural programs really start producing more, we hope to get a meat-processing plant built," Mr. Tom said. "Most of our members go off the reservation for employment such as at a near-by oil refinery and a lumber mill."

"If we can get about 1,000 acres cultivated and producing crops of all types, that would be

enough to get management and work for those who need employment," he added.

Near-by Zion National Park and Page provides employment for some tribal members for seven or eight months of the year if the right qualifications are met.

Chairman Tom is the only paid employee of the tribe. Most members work off the reservation. A total of 20 families live on the reservation, giving it a population of about 100 people. Another 100 are enrolled members of the tribe but live elsewhere off the reservation.

Children on the reservation attend kindergarten through the third grade at Moccasin, a Mormon village about 1½ miles northwest of the Kaibab Paiute village. A small bus takes the children to school.

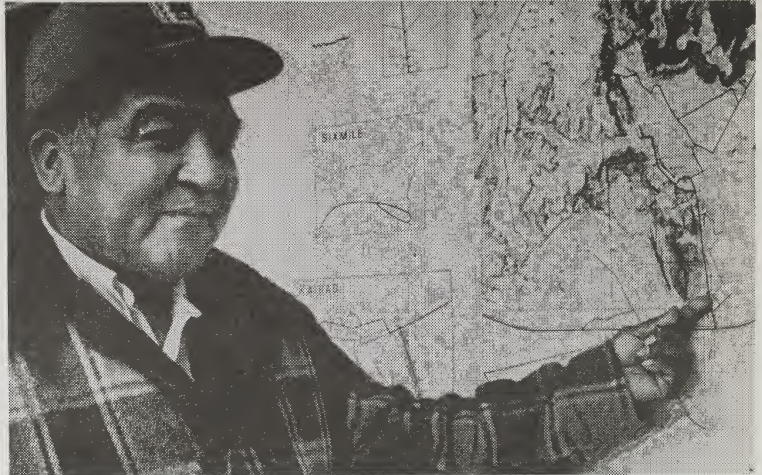
A larger bus transports 4th through 12th grade students to Fredonia where most of the tribal members graduate from high school. Some go on to attend college.

Chairman Tom's son, Gary, is the first of the tribe to graduate from college. He majored in music and has been an inter-tribal, inter-cultural counselor at Southern Utah State College for several years.

Pipe Spring, an Indian Cultural Museum and a camper-trailer park helps the tribe with some outside tourist dollars. The tribal campground is located about one mile north of state highway 389 (the major route between Las Vegas and Lake Powell) and about ¼-mile northeast of Pipe Spring National Monument.

From the vantage point of the campground, visitors can see the colorful Vermillion cliffs to the north, the south rim of the Grand Canyon at the terminal point of Kanab Creek, and Mt. Trumbull to the west.

Daytime activities for the tourist on the reservation are family-oriented. Self-guided educational hiking trails lead to intriguing petroglyphs and sweeping mesa overlooks. A Native American Cultural



Chairman Bill Tom explains the location and size of the reservation in northern Arizona. (Photos these two pages by Hal Williams)

Museum is adjacent to the camp office.

Of course, Pipe Spring National Monument is just a short distance away and features a living historical fort and farm which serves as a tribute to early Mormon pioneers.

"We're in the process of originating activities for people coming through the area," Chairman Tom said. "Brochures have been written by Wisconsin college students and distributed across the country. We also have a building by the fort leased but there is not much income yet for the tribe from this operation."

Some of the tribal elderly are passing on some of the traditions to young people. These include basket-weaving, other native products, and their tribal language.

The chairman said that willows for baskets were formerly abundant on the reservation but these willows now grow only near Kanab. But, he pointed out, it is possible (with the water situation) to grow willows as a product for making baskets.

He said that crafts made by the Kaibab Paiutes (historically and at the present time) are useful. These include pottery, baskets and some buckskin work. Gathering of pinon pine nuts was done in the area commercially during the '40' and '50s but very little is done now—even by tribal members.

The tribe has a central water and chlorination system as well as a central sewer system. It also has ample electricity and two

lakes into which irrigation water is pumped and stored.

One of the most impressive sites in the village is the two-year-old recreation center which has a full basketball court, kitchen, dressing rooms for men and women, office and classroom, and can hold 500 people.

The recreation center is complementary to the six new homes in the village. "We hope to get more," the chairman said. The new ones are wooden; others are mostly cement block. Still, though, some families live in

much older homes made before World War II. A few house trailers dot the village.

Near the village is a former church building which served the tribe as a multi-purpose building for many years. However, the new recreation center replaces this building for tribal functions.

Chairman Tom, himself a Mormon like a number of the tribe, is a man of vision.

He believes that his tribe will have self-determination when it becomes self-sustaining.

And he and tribal members are working hard to do just that.



Nataasha Drye, at age four, rides the playground merry-go-round. She is learning things from the old folks, too.



Senior citizens of the tribe are passing on traditions of arts and crafts as well as the language to youngsters in the tribe.



Chairman Bill Tom gives BYU's Howard Rainer a tour through the new recreation center.



The Mormon-built fort stands as a monument to the pioneers who built it in the 1800s.



Corrals housed cattle and sheep of the early settlers in the area and have been rebuilt.

Pipe Spring Attracts Tourists

One of the unique tourist attractions near the Kaibab Paiute reservation is the picturesque, well-preserved Mormon fort at Pipe Spring. It is a testimony to the conflict between settler and Indian that marked American expansion into the West.

Pipe Spring was discovered by a group of Mormon missionaries to the Indians. Led by Jacob Hamblin, they camped at the spring in the autumn of 1858 while en route to the lands of the Hopi Indians.

Tradition says that the place derived its name from a shooting incident that occurred at this time. William "Gunlock Bill" Hamblin shot the bottom out of a smoking pipe to demonstrate his marksmanship; hence, the name of Pipe Spring.

Following trails pioneered by the missionaries, James M. Whitmore established a claim at Pipe Spring in 1863 as a part of a wave of migration into the region. In 1865 he built a dugout, fenced an area, and started a livestock ranch because there was an abundance of forage.

While the Mormons were moving into the Pipe Spring country, the U.S. Army was campaigning against the Navajos south of the Colorado River. Raiding bands of Navajos began crossing the river in search of food.

The first casualties of the 1866 Navajo raids were James Whitmore and his herder, Robert McIntyre, in January of that year. A few months later, three members of the Berry family were killed near Short Creek

which is west of Pipe Spring.

These killings led to the abandonment of Pipe Spring that summer. But by the next spring, the area was used by the Utah Territorial Militia as a base for their operations against the raiding Navajos.

In 1870, President Brigham Young of the Mormon Church and his advisers decided to establish a ranch for raising cattle and producing dairy products for near-by settlements.

Anson Perry Winsor was appointed superintendent of the ranch and asked to build a fort at Pipe Spring to protect the families and other workers.

The fort, originally called "Winsor Castle," is typical of the Mormon forts built in the Utah Territory. Never attacked, it served as a ranchhouse until 1923 when it became a National Monument under the administration of the National Park Service, a division of the U.S. Department of the Interior.

Pipe Spring is an oasis in the desert, located on the Moccasin Terrace of the Markagunt Plateau near the south-facing edge of the Vermillion Cliffs. This area, just south of the interstate line of Utah and Arizona, is commonly called the Arizona Strip.

Its elevation is about 5,000 feet above sea level and the climate is fairly temperate. Water from the spring flowing from the Sevier Fault provides an ideal habitat for the flora and fauna of the oasis.

Plant and animal life of the monument is typically semi-desert. Various species of small

rodents live among the sagebrush and cactus, where in turn they are prey for coyotes and badgers. One may also find signs of a porcupine or a pinyon pine or a juniper tree. Some reptiles and many birds also make their home at Pipe Spring.

Fruit Tree Project Under Way

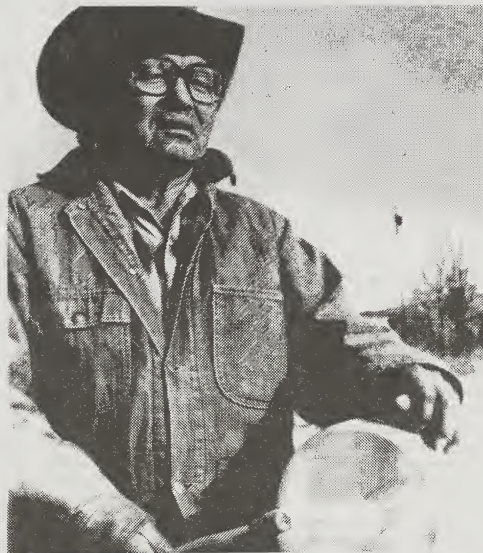
Green leaves popping out on young fruit trees planted this spring on the Kaibab Paiute Indian reservation in Northern Arizona are bringing smiles to many people.

Tribal Chairman Bill Tom and members of the tribe are in the first stages of a large fruit tree project they hope will uplift the economic conditions of the area.

The tribe, with the help of the Economic Development Administration (Department of Commerce) and the Bureau of Indian Affairs, purchased 1,247 fruit trees from American Indian Services at Brigham Young University and planted them on a 25-acre area of virgin sandy-loam soil east of Moccasin.

Money from the EDA funded the clearing of brush from the land and the tilling, Mr. Tom said, in addition to paying for drilling two wells more than 400 feet deep. One well pumps 1,200 gallons per minute; the other about 600 gallons per minute.

The BIA funded piping of various sizes used in the project,



Dan Bulletts, 75, is the oldest member of the tribe and converted to the LDS Church in 1951. He teaches youngsters language, singing and drum playing.

carrying the precious water from the two wells to each tree through an intricate system operated on a timer. Each tree has two 1/8th inch sprayers to supply water through the system.

"In the past few years, individuals in the tribe had purchased fruit trees from BYU and they've done very well in our climate," the chairman said. "We planted just half the number we plan to so that we can be sure that the trees will bloom and not be hit by frost as they mature. We hope to plant the remainder of the trees next year."

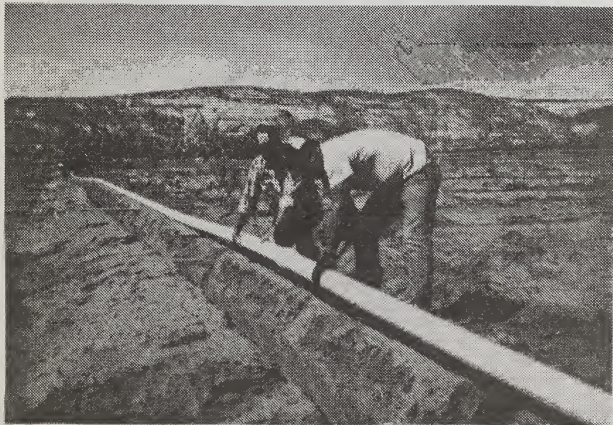
Right now the trees look very good, according to Mr. Tom.

"We're now working out some of the timing problems in the watering system.

Near the orchard, the tribe has more than 160 acres of winter wheat and oast planted. After the harvest in July, they will plant alfalfa.

"We need to clear additional land," the chairman said, "so that we can utilize the water and help the economics of families on the reservation."

In the past several year, AIS has given Christmas parties (with presents for the children) on the reservation as well as donated a buffalo to the chairman for a special project.



Members of the tribe lay large pipe so that smaller pipe can be connected on for watering of the fruit trees.



Now that the pipe is in, fruit trees were purchased from American Indian Services at BYU and planted in the fertile soil.

Stewart Related To Sitting Bull

By Mable H. Franklin

BYU student, Charlie Stewart, one of 11 children and a Sioux Indian from Pine Ridge, S.D., found *out through genealogical research that he is a decedent of Sitting Bull.

Being a convert to the LDS

Orientation

Contd. From Pg. 1

class work and career options.

Each participant will be enrolled in 7 or 8 hours of classroom instruction. This summer term, students will be offered classes in math, English, Indian arts, Indian music, sociology, etc. In addition, all of them will be taking career exploration field trips and an overnight camping trip where they will learn outdoor survival skills and a chance to go rappelling.

Throughout the eight week program, educational field trips will be conducted. Special firesides have been planned, different social activities will be held, and this summer each student will also be able to view the Manti Pageant, which is an annual pageant about the early history of the Mormon Church.

Fifteen percent of the students who will participate in the program this summer will be high school juniors. They will also have the same opportunities of incoming freshmen. At the end of the program, the juniors will be returning to their high schools for their senior year while the others stay in college.

"The juniors who attend the summer program will not only earn college credit while they are still in high school but also receive a variety of learning experiences through this program, and it will help them meet the challenges and motivate them to take certain classes in high school," explains Dr. Osborne.

Church, Stewart realized the need to do geneology. He started by doing temple work for his deceased father and being intrigued to do more he continued to research his ancestors.

Stewart, having difficulty with some aspects of his search, realized that the English names and native names had no relationship, so he went to living relatives and grandparents to find out names and other information. His mother, who is also studying at BYU and doing geneological research, was a great help to her son, but it is on his father's side that he finds it difficult to do work.

Researching Sitting Bull and getting to know him through books gave Stewart a better perspective of just what kind of person Sitting Bull was. Charlie indicated that just reading about Sitting Bull in school history books and common knowledge was not enough, but he had to find out for himself exactly what others who lived in Sitting Bull's day thought about him. Many hours were spent combing books in libraries in books such as Lewis and Clark journals, Spanish Conquistador records and frontiersmen's stories, so he could become more acquainted with his legendary great-grandfather.

Another rewarding experience occurred at BYU. Strator Crowfoot, a fellow student, from Canada, let Stewart read his family history. In it, Stewart found that after the battle of Little Big Horn, Sitting Bull journeyed north to Canada where he was received into a tribe led by a chief named Crowfoot.

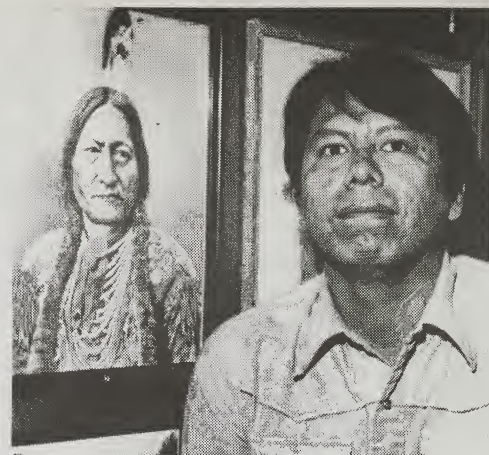
Sitting Bull, being very impressed with this chief, decided to name one of his own sons after him.

How Sitting Bull received his name was also of interest. "His father had a vision of a white buffalo which is most sacred to the Indians after an incident related to his son. The father was

so impressed with his son that he gave his name Sitting Bull to his son and took another name for himself."

Unable to find the precise location of his great grandfather's grave, Stewart speculates, "I don't think he is buried there (a grave with a monument honoring Sitting Bull in Fort Yates) because many people desecrated graves in those days. They like to take parts of bones as souvenirs. So to protect Sitting Bull, I think they would have buried him elsewhere."

Many like Charlie Stewart are doing geneology to find out about themselves and who their ancestors really were. Charlie admonishes those who are doing geneological research to do so with the help of the spirit.



BYU student Charlie Stewart poses by his ancestor Sitting Bull. (Photo by Hal Williams)

Tobacco Good For Bruises

Tobacco may be hazardous to your health if smoked but not if applied to bruises, according to a Brigham Young University researcher.

Dr. Rulon S. Francis, a professor of physical therapy in the BYU Human Performance Research Center, said studies he has conducted on rats show that bruises treated with tobacco heal 20 percent faster than untreated bruises.

In a report published in "Athletic Training" magazine, the professor said he was prompted to investigate the healing effects of tobacco after BYU athletic trainer Marv Roberson returned from the 1971 Balkan Games in Yugoslavia with stories of the successful use of commercially manufactured tobacco substances on bruises of basketball players.

Roberson obtained a few cans for use in the United States; after they ran out, he began making his own tobacco poultices.

When Dr. Francis decided to scientifically evaluate the effect

of tobacco on healing, he was surprised to find practically no previous research on the subject.

During the Middle Ages and on into the years immediately preceding the era of modern medicine, tobacco in various forms was employed as a "medicinal" for maladies ranging from rheumatic pains to toothache, the professor said. "Today, tobacco is negatively associated with such notorious maladies as carcinoma and emphysema."

He was further intrigued by a statement of Mormon prophet Joseph Smith who, in 1833, said that "tobacco is not for the body, neither for the belly, and is not good for man, but is an herb for bruises and all sick cattle, to be used with judgment and skill."

The magazine article says Dr. Francis set up an experimentally validated "traumatizing unit" to uniformly bruise the thighs of 80 anesthetized rats.

Commercially distilled tobacco juice was then painted on

the thighs of 40 of the specimens for a period of two weeks. The other 40, the control group, were painted with distilled water.

Both the number of healing cells (granular white blood cells, lymphocytes, plasma cells, macrophages, etc.) and the size of the bruises were monitored. Dr. Francis discovered that the tobacco-treated tissue contained 20 percent more healing cells and the size of the bruises decreased 20 percent faster than in the non-treated tissue.

The professor said further research needs to be done to determine exactly what it is in Nicotiana Tabacum that causes the healing. It may be due to one of several alkaloids, but because so little research has been done, "one can only theorize as to the reason," he stated.

Dr. Francis is conducting additional research to determine the effectiveness of tobacco compared with traditional mustard and linseed poultices and other bruise treatments.

Americans Illiterate -- Not Thoughtful

Charging that public (government) schools really don't want literacy, a New Jersey college professor told the Brigham Young University Forum audience this week that America needs a new kind of revolution—one in which participants are thoughtful.

Dr. Richard Mitchell, professor of English at Glassboro State College near Philadelphia, pointed out that "American education is designed to prevent us from becoming thoughtful for the simple reason that the culture in which we all have so much invested cannot survive without a large and regular supply of gullible victims.

"Thus, literacy which is not to be understood as a collection of skills but as the medium of thought and the essential characteristic of a way of life, is not in our collective interest, however valuable it might be to individual minds. A collective and institutionalized system of schooling, therefore, neither will nor can provide education," the professor charged.

As an illustration of this, he read a directive written to teachers and administrators in

the Philadelphia School District. It stated: "During the 1980-81 school year, the project will provide teachers and administrators with education and support designed to optimize the behaviors and conditions in the school which support student learning to the extent that at least two thirds of the teachers receiving training and support in expectations will report, on a specifically designed survey, changes in at least two school related operational characteristics that have been identified as critical elements of the network of expectations that support learning."

He charged that the author of this edict is illiterate and that the author has "brother and sisters, cousins, and aunts and uncles" doing similar writing all across the United States. "The author of this directive used 'passed on' jargon of a 'corporation.' An individual human mind does not speak in these terms," he observed.

Popular author, publisher and "assistant circulation manager" of the "Underground Grammarian," Dr. Mitchell views literacy in two distinct

schools. He has identified these as Mesopotamian and Athenian.

He defines the Mesopotamian literacy as "token" literacy, beginning with a concrete world in which people make DC-10's, build pyramids, dig massive canals or backyard swing sets. "The only problem with this," he quipped, "is that it requires no thinking."

The speaker defined Athenian literacy as one which makes a statement such as "some men are stronger than others." He observes that the next statement is about the first one, the next statement about the preceding one, and so forth. "This process reaches escape philosophy," he added.

"People are different from racoons and other creatures on earth because we can examine life through language, through statements. There is no record yet of any great country being overthrown by ideas—only by Mesopotamian literacy," he pointed out.

Poking fun at much of today's education which prepares people for a job only, Dr. Mitchell claimed that if a visitor from Mars came to earth, he would

basically see people writing letters of application for a job.

He said that a literate American would be one who could understand a correct analogy, would not elect any "politician," would not continue to support a particular deodorant as promoted on television, and would know that kitchen cleaners are also useful in cleaning the bathroom.

"A literacy revolution in America would dispossess writers of directives as given in the earlier example, making a marvelous change in our country. It's odd that people have gone to government to ask for protection against government. Yet, Thomas Jefferson said that governments and individuals have different purposes. Government now has been given the power to defraud as exemplified by the author of the directive," he observed.

With a smile, he told the audience, "Don't count on me for leading the revolution. I work for a government agency. But you students can pledge your lives.

fortunes and sacred honor to make a difference."

In a question and answer period, the professor said that novelists know how to write but are not "writers," that he hates to write but writes a lot, and that (like other essayists) he never knows what he understands until he writes it.

Dr. Mitchell, a father of four children, observed that people really become literate within the family. "The spirit of the family teaches people to speak and become thoughtful."

He quipped that if all public schools evaporated overnight, "we'd all be better off." Concerning a question on private schools organized to counter the failure of public schools in basic education, he said he is deeply distrustful about these schools because they are also teaching a value system that is requiring distortion and even lying.

He deplores the current trend in changing the sexism in the English language. This movement really began in 1918 and is ruining the language.

Mayans Repeated History

Like many other civilizations, the Maya Indians of Central America made the classic mistake of ignoring history--thereby dooming themselves and bringing the final fall of their once great empire.

El Mirador in the jungle of Guatemala is proof of that.

BYU's Dr. Ray Matheny returned late this spring from the area, leading a group of archaeologists and anthropologists studying the massive city covered by jungle for centuries.

Most archaeologists claim that big government caused the collapse in the ninth century A.D. rather than climatic changes. Observers feel that as the nobility grew increasingly ambitious and more insistent on building monumental cities, the demands on the work force and on natural resources became too great.

War broke out between various Mayan centers competing for labor and material goods. Stelae carved just before the collapse depict especially violent scenes of victors torturing their captives.

At the same time, the laborers who were expected to wage wars were underfed and overburdened. Studies of Mayan bones and teeth indicate that commoners suffered from severe malnutrition, rickets and other disorders. Toward the end of the civilization, the Maya were smaller in stature, a sure sign of an inadequate diet.

This scarcity of food may have caused many of them to pick up and leave, moving to sites in northern Yucatan which became more populated not long after A.D. 900. There again was a frenzied monument building program in the late period, apparently bringing about the demise of the civilization.

Dr. Matheny led the expedition to the center of the flat, rain-soaked Peten Forest in northern Guatemala about five miles from the Mexican border. The horizon is broken by a cluster of hills.

Natives (especially the cicic workers) call the area El Mirador ("The Lookout") because the area is dotted with high mounds that some day may be excavated. The mounds were once pyramids, platforms, public buildings and homes.

These have been buried for about 1,500 years, Dr. Matheny said. The expedition consists of students from BYU and The Catholic University of America, the latter group led by Dr. Bruce Dahlin.

The expedition, which just completed its third year digging in the ruins, is trying to find clues to puzzling questions which have baffled archaeologists about the Mayan civilization. These questions include the cause of the collapse and sudden disappearance of the huge empire, how did the people live in such extreme weather which had eight months of heavy rain and four months of drought, and when did the culture reach its peak?

What has been found in the first two years (1979 and 1980) proved to scientists that El Mirador is the most important lowland Mayan site in existence. It is suspected as having been the most populous city in its time.

Archaeologists generally believe that the Mayan culture peaked about 500 A.D. and vanished by 900 A.D. However, samples of pottery shards and remains of huge public buildings show that the peak of activity may have come about 200 B.C. or 100 A.D.

Dr. Matheny reported that about 90 percent of the artifacts recovered from the private dwellings, temples, plazas and reservoirs date from before the time of Christ.

"These discoveries support the theory that the Mayan had a highly sophisticated society about the same time the Romans were settling their capital town," Dr. Matheny said. "This could have some effect on traditional theories about Mayans' class order, political structure, economics, religious practices and technical knowledge."

The archaeologist said that one mystery seems to be unsolved to date in the archaeological explorations: Why the area is so well preserved?

He pointed out that the buildings are made of limestone. It was cheap and abundant, but disintegrates easily when exposed to seasonal temperatures and climate -- especially the monsoon

weather of Guatemala.

Dr. Matheny asks, "How can nearly 200 structures and 12 pyramids still stand under those conditions?"

Part of the answer came last year when BYU graduate student Richard Hansen led a group to clear away debris from one side of a pyramid called Tigre ("Jaguar"). They found a huge stucco mask about 20 feet long next to a stairway facing a huge plaza.

This half-human, half-animal face is so carefully carved that the growl of the god's lips, the claws jutting from the hands, and the earlobe are all clearly identifiable.

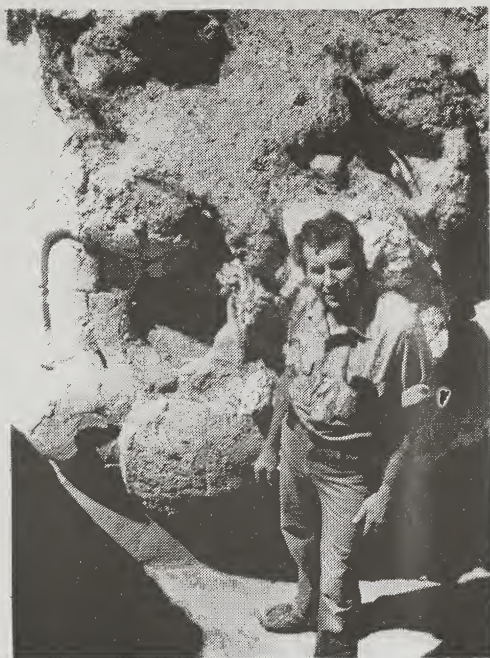
The Mayans, perhaps sensing an outside invasion or death from climatic changes, buried their god under rock and dirt to protect it. At least, that's what it seems to the BYU archaeologists because of how it was buried and perhaps for what reason.

The team also explored a massive building called Danta, located about 1½ miles from Tigre. Danta is one of the largest known buildings in antiquity found anywhere in the world. It is about 200 feet high and has a base of about 1,000 feet.

"Danta is important because it is on a centerline with other massive buildings in the area and each platform has a series of smaller buildings similar to a small village," the professor said. "Placement of these buildings may relate to significant astronomical events such as the summer or winter solstice, the appearance of major constellations at certain times of the year, etc."

He reported that Danta is one of the most unusual formations found in Meso-America and nothing like it exists anywhere else. The temple site of Tigre is six times as large as any other lowland building yet discovered. But Danta may be even larger. Future studies will determine that.

"Remains of an early Maya culture still exist in Belize, the country east of Guatemala, surrounded by the warm currents of



Dr. Ray Matheny, BYU professor of anthropology and El Mirador expedition coordinator, stands in front of the strange face carved by the Mayan on a temple facade.

the Caribbean," Dr. Matheny said. "Water was plentiful there and settlement there by the Mayans seems logical. But an interesting question is how did the Mayans support a megalopolis in the center of the forest?"

Another mystery about the Mayans is how did they raise food for such a large population in such a harsh forest environment. "Soil tests suggest that root crops may have been successfully raised in the seasonal swamps. Much of the forest near El Mirador on the uplands much have been removed for some kind of food production, but archeologists have found no rock and soil terraces here as have been found in other Mayan sites," he observed.

"Perhaps food was imported, engendering a brisk trade network," Dr. Matheny suggested. "We've found no 'raised fields' for food production."

The scientist pointed out that modern technology relies on short-term solutions to tropical land management problems such as using synthetic fertilizers, pesticides, and herbicides which have harmful, long-term effects and can disrupt the ecosystems of

the fragile tropical forest. "Further investigation may lead to a greater understanding of tropical ecology," he added.

Dr. Matheny said that like spokes from a wheel, three long causeways--earthen dams or dikes--stretch through the northeast corner of El Mirador going away from the great temple Tigre. "These causeways are about 42 feet wide and 4 feet above the floor of the city. Another causeway south of Tigre cuts across a bajos (swamp)."

"These causeways undoubtedly were foot bridges used by the Mayans to get from one end of the city to the other, but they may have also played a role in the Mayans' sophisticated water system. They could have served as dams to hold the city's drinking water," the professor said.

During the past season, the expedition dug into a temple site, uncovered the half of the Tigre temple facade, and uncovered some of the Mayan elite structures located close to temple sites.

The excavation added one more chapter to unraveling some of the unknown mysteries about these ancient people and their lifestyles.



Cutting through jungle debris, excavators found cut stone pieced together for a terrace.



Vessels decorated by the Maya Indians about 2,000 years ago were used daily for many things. (Photo by Grant Williams)



With skillful hands, Lucille Jake weaves a basket and teaches youngsters how to do the almost lost art.

Photo by Hal Williams

Through many years of life, the "old ones" have accumulated the wisdom and knowledge needed to understand man's purpose in life.

The beauty of their aged faces reflect the many seasons of growth. Their teachings should play an important role in our education and struggle for survival.

We should learn to respect and show appreciation for those who have walked the path of life before us.

It is through them and because of them that we come to know who we are and our destiny in life.

Receive their words, for they contain wisdom.

Heed their warnings, for we can apply them in our day.

They may not be up with our fast-paced life, but they are reminders to us of the patience we sometimes need when our demands are great.

It is because of them and their desire for a better life that has instilled in each of us a desire to strive for the same quality of excellence for our posterity.

--Marie Robbins

--Mae Franklin